TECHNICAL REVIEW DOCUMENT
for
MODIFICATION TO OPERATING PERMIT 95OPAD108

Suncor Energy (U.S.A), Inc. – Denver Refinery, East Plant
Source ID 0010003

Prepared by Jacqueline Joyce
December 2008 and January 2009
Revised April 2009

I. Purpose:

This document establishes the decisions made regarding the requested modification to the Operating Permit for Suncor Energy's - Denver Refinery East Plant. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the requests for modifications submitted to the Division on June 4, August 3, September 10 and December 17, 2007 and June 18 and September 2, 2008, comments on the draft permit and technical review document received on March 12, 2009, additional information submittals received on March 9, April 2 and 20, 2009, e-mail correspondence and telephone conversations with the source. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Permit Modification Request/Modification Type

The Operating Permit for the Suncor East Plant was issued on October 1, 2006. The expiration date for the permit is October 1, 2011. Each of the modification requests will be addressed separately to identify the modification type and any associated modeling required for that modification.

June 4, 2007 Modification

The purpose of this modification is to reflect a change in the type of petroleum liquid

stored in Tank 24 (T-24). This tank previously was used to store aviation fuel and Suncor has proposed to return tank T-24 to gasoline or lower vapor pressure petroleum liquid service. With this modification, the source is requesting an increase in permitted emissions from 0.64 tons/yr to 1.9 tons/year (increase of 1.26 tons/yr).

In addition, the source indicated that they would discontinue the unloading and storage of aviation fuel. The lines for the aviation fuel transfer station were taken out of service. The lines were isolated, drained, flushed and purged and the lines have been blinded off. The source submitted a request to cancel the APEN for the aviation fuel transfer station on April 20, 2009.

Modification Type

The source indicated that this modification would qualify as a minor modification. Colorado Regulation No. 3, Part C, Section X.A identifies those modifications that can be processed under the minor permit modification procedures. Specifically, minor permit modifications "are not otherwise required by the Division to be processed as a significant modification" (Colorado Regulation No. 3, Part C, Section X.A.6). The Division requires that "any change that causes a significant increase in emissions" be processed as a significant modification (Colorado Regulation No. 3, Part C, Section I.B.36.h.(i)). According to Part F of Regulation No. 3 (Section I.L, revisions adopted July 15, 1993, Subsection I.G for modifications) the Division considers that a significant increase in emissions is the potential to emit above the PSD significance levels (40 tons/yr of VOC). Since the requested increase in permitted VOC emissions is below the PSD significance levels the Division agrees that this modification can be processed as a minor modification.

In addition, the Division requires that "any change that is considered a modification under Title I of the Federal Act" be processed as a significant permit modification (Colorado Regulation No. 3, Part C, Section I.B.36.h.(ii)). Part F of Regulation 3 Section I.L, revisions adopted July 15, 1993, Subsection I.G for modifications) describes more specifically what constitutes a modification under Title I of the Federal Act and it indicates that a modification which triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification. This is an existing tank and as such is already subject to NSPS and MACT requirements, which are included in the Title V permit. Therefore, since no new NSPS or MACT requirements are triggered, this modification is not considered a significant modification and can be processed as a minor modification.

Modeling Requirements

This project results in an increase in VOC emissions of 1.26 tons/yr. Although VOC is a precursor for ozone, in general accurate and cost effective methods for modeling ozone impacts from stationary sources are not available. Therefore, individual source ozone modeling is not routinely requested for permit modifications.

August 3, 2007 Modification

The purpose of this modification is to replace the existing burners in the Fluidized Catalytic Cracking Unit (FCCU) pre-heater with low-NO_X burners. This replacement is intended to enable Suncor to meet the facility-wide interim NO_X reductions required by the Valero Consent Decree (CD). Previously the pre-heater was not subject to annual emission limitations. The source has requested annual limitations based on the design rate of the pre-heater and 8760 hours per year of operation. Requested emissions from the pre-heater are below the PSD significance level for all pollutants, as shown in the table below.

	Requested Emissions (tons/yr)					
	PM	PM_{10}	SO_2	NO_X	CO	VOC
FCCU Pre-Heater (H-201)	1.9	1.9	7.0	23.2	21.3	1.4

Based on the methods used to estimate emissions from this unit before and after this modification, emissions from the unit will remain the same for all pollutants except for NO_X emissions, which are reduced by 2.3 tons/yr.

With this modification, there are other applicable requirements that may be triggered and some of those were addressed in the source's application. Specifically, the following requirements are potentially triggered by this modification:

New Source Performance Standards (NSPS)

There are several potential NSPS requirements that could be triggered with this modification, the requirements in 40 CFR Part 60 Subparts Dc and J, which are adopted by reference in Colorado Regulation No. 6, Part A and Colorado Regulation No. 6, Part B, Section II. A modification is defined in 40 CFR Part 60 Subpart A as a physical change or change in the method of operation that results in an increase in the emission rate (on a kg/hr basis) of a pollutant for which a standard applies. Colorado Regulation No. 6 Parts A and B adopt 40 CFR Part 60 Subpart A by reference. As discussed above, there is no increase in the hourly emission rate for any pollutant; therefore, this modification does not trigger any NSPS requirements.

However, as the source indicated in the application, as required by the CD, the FCCU pre-heater is subject to the requirements in 40 CFR Part 60 Subparts A and J.

Maximum Achievable Control Technology (MACT) Standards

This source indicated that the provisions in 40 CFR Part 63 Subpart DDDDD for commercial, industrial and institutional boilers and process heaters (the Boiler MACT) could be triggered by this modification and demonstrated that the modification of the FCCU pre-heater did not qualify as a re-construction. The provisions in 40 CFR Part 63 Subpart DDDDD apply to new, existing and reconstructed sources, although existing large gaseous-fired units were only subject to the initial notification requirements.

As of July 30, 2007, the Boiler MACT was vacated; therefore, the provisions in 40 CFR Part 63 Subpart DDDDD are no longer in effect and enforceable. The vacatur of the

Boiler MACT triggers the case-by-case MACT requirements in 112(j), referred to as the MACT hammer, since EPA failed to promulgate requirements for the industrial, commercial and institutional boilers and process heaters by the deadline. Under the 112(j) requirements (codified in 40 CFR Part 63 Subpart B §§ 63.50 through 63.56) sources are required to submit a 112(j) application by the specified deadline. As of this date, EPA has not set a deadline for submittal of 112(j) applications to address the vacatur of the Boiler MACT. Although this unit was only subject to initial notification requirements, the Division considers that a 112(j) application should be submitted for this unit. Therefore, the Division will include the requirement to submit a 112(j) application by the deadline set by the Division and/or EPA.

Modification Type

The source indicated that this modification would qualify as a minor modification. As discussed above, under the June 4, 2007 modification, a modification that results in an increase in emissions below the PSD significance level can be processed as a minor modification. This modification does not result in the increase in any emission limitations; therefore, the Division agrees that this modification qualifies as a minor modification.

In addition, as discussed above, under the June 4, 2007 modification, a modification that triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification and must be processed as a significant modification. As discussed above, NSPS requirements were not triggered, although the CD requires that the FCCU pre-heater meet NSPS requirements regardless of whether or not this modification is made. The appropriate NSPS requirements are already included in the permit. Therefore, the Division considers that since no new NSPS requirements will be included in the permit with this modification, it can be processed as a minor modification. In addition, although this unit would not have triggered any requirements under the Boiler MACT, since the Boiler MACT has been vacated the case-by-case MACT requirements would apply. As discussed previously, the Division is only including the requirement to submit a case-by-case MACT application at a date to be specified in the future, the Division considers that this a non-substantive requirement (i.e. not an emission limitation, control requirement or design restriction) and as such it can be processed as a minor modification.

Modeling Requirements

With this modification there will be no change in emissions of PM, PM_{10}, SO_2, CO and VOC from the heater and a slight decrease in NO_X emissions (2.3 tons/yr). Therefore, no modeling is required for this particular modification.

September 10, 2007 Modification

The purpose of this modification is to replace three existing tanks (T-31, T-55 and T-56) with the installation of a single new tank (designated T-79). The new tank will serve as the sweet gas oil storage tank for both the East Plant and the West Plant (OP No. 96OPAD120). Requested emissions for new tank T-79 are 2.1 tons/year and fugitive

VOC emissions from equipment leaks from this new tank are estimated to be 0.61 tons/yr. Therefore, total emissions from this project are 2.7 tons/yr of VOC, which is below the PSD significance level.

As indicated in the application, the Division agrees that the new tank will be subject to the requirements in Colorado Regulation No. 7, Sections VI.A.1 and VI.B.2.b and that it is not subject to Section VI.B.2.a (RVP less than 1.3 psia), Section VI.B.2.c (tank does not have an external floating roof) and Sections VII.B and C (pumps and tank do not transfer or store crude oil). Although not specifically stated in the application, the tank is also subject to the general requirements in Colorado Regulation No. 7, Sections III (Storage and Transfer) and V (Disposal).

In addition, as indicated in the application, the Division agrees that the tank is not subject to the requirements in 40 CFR Part 60 Subpart Kb, since the liquids stored in the tank have a true vapor pressure less than 3.5 kilopascals (kPa).

Finally, as indicated in the application, the Division agrees that the tank is subject to the requirements in 40 CFR Part 63 Subpart CC (Refinery MACT) as a Group 2 tank, since the true vapor pressure of the liquid stored is less than 10.4 kPa. As a Group 2 tank that is not subject to 40 CFR Part 60 Subpart Kb, it is subject to the storage vessel requirements in the refinery MACT (§ 63.646); however, as a Group 2 tank there are no control or monitoring requirements, only recordkeeping requirements. This tank is subject to recordkeeping requirements in 40 CFR Part 63 Subpart G § 63.123(a), as noted in the Refinery MACT (§ 63.654(i)(1)) and the current permit (Section II, Condition 32.23). Pertinent records to be kept are the dimensions of the storage vessel and an analysis of the capacity of the storage vessel.

Modification Type

The source indicated that this modification would qualify as a minor modification. As discussed above, under the June 4, 2007 modification, a modification that results in an increase in emissions below the PSD significance level can be processed as a minor modification. The increase in emissions from this project are less than 3 tons/yr of VOC, which is much lower than the PSD significance level, therefore, the Division agrees that this modification can be processed as a minor modification.

In addition, as discussed above, under the June 4, 2007 modification, a modification that triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification and must be processed as a significant modification. The new tank will be subject to MACT requirements. However, the MACT requirements for tanks are already included in the permit. In addition, as discussed previously, this tank is subject to recordkeeping requirements, which are non-substantive requirements (i.e. not an emission limitation, control requirement or design restriction). Therefore, since the MACT requirements are already in the permit, the Division considers that no new MACT requirements are triggered and this modification can be processed as a minor modification.

Modeling Requirements

This project results in an increase in VOC emissions of 2.7 tons/yr. Although VOC is a precursor for ozone, in general accurate and cost effective methods for modeling ozone impacts from stationary sources are not available. Therefore, individual source ozone modeling is not routinely requested for permit modifications.

December 17, 2007 Modification

The purpose of this modification is to streamline the monitoring provisions in the EPA PSD permit in favor of the SO_2 Compliance Plan that was required by the Title V operating permit (Section II, Condition 22.4 and Appendix H). The source indicated that the provisions in the SO_2 Compliance plan are equivalent to or more stringent than the monitoring indicated in the EPA PSD permit.

A comparison of the monitoring specified in the EPA PSD permit with the monitoring required by the SO_2 Compliance plan follows:

Fuel Gas-Fired Sources

Both the EPA PSD permit and the SO_2 Compliance Plan specify that SO_2 emissions from fuel-gas fired sources be estimated using the sulfur content of the fuel and metered fuel use. However, the SO_2 Compliance Plan indicates that the H_2S concentration in the fuel gas be monitored continuously (as required by NSPS Subpart J), while the EPA PSD permit specifies that grab samples be taken. In addition, the SO_2 Compliance Plan specifies that the volume of gas combusted in each unit is measured continuously and averaged over a 24-hour period, while the EPA PSD permit just indicates that metered gas will be used in the calculations. Since the SO_2 Compliance Plan specifies continuous H_2S sampling of the fuel gas (as required by NSPS Subpart J) and continuous monitoring of fuel consumption, the Division agrees that the SO_2 Compliance Plan and NSPS Subpart J requirements are more stringent than the EPA PSD permit and that the EPA PSD permit requirements can be streamlined.

Fluidized Catalytic Cracking Unit (FCCU)

The Title V permit was revised on December 15, 2006 to specify that SO_2 emissions from the FCCU regenerator be monitored using a CEMS. The Valero Consent Decree (November 23, 2005) required that an SO_2 CEMS be installed and used for the FCCU. Previously the Title V permit did not require an SO_2 CEMS unless the capacity of the unit exceeded a certain level (this was a requirement in the EPA PSD permit). The SO_2 Compliance Plan also specifies the use of the SO_2 CEMS to calculate emissions from the FCCU regenerator. Since the EPA PSD permit only requires an SO_2 CEMS when a certain capacity is exceeded and the Title V permit and SO_2 Compliance Plan specify that an SO_2 CEMS shall be used at all times, the Division agrees that the Title V permit and SO_2 Compliance Plan are more stringent and will streamline the EPA PSD permit requirements.

Sulfur Recovery Unit (SRU) / Claus Plant

The EPA PSD Permit specifies that an SO_2 CEMS be used to demonstrate compliance with the SO_2 emission limitations and the SO_2 Compliance Plan specifies that an SO_2 CEMS be used to demonstrate compliance with the SO_2 emission limitations. The source is not requesting that the EPA PSD permit monitoring requirements be streamlined from the permit but is requesting that the calculation method specified in the EPA PSD permit (Appendix A) be streamlined in favor of the calculation method specified in the SO_2 Compliance Plan. The Division agrees that the calculation methods specified in the SO_2 Compliance Plan are equivalent to or more stringent than the methods specified in the EPA PSD permit. Therefore, although it doesn't appear that Appendix A of the EPA PSD permit has been incorporated into the Title V permit, the Division has streamlined the calculation methods specified in the Appendix A, since the SO_2 Compliance Plan is equivalent to or more stringent than the methods specified in the EPA PSD permit.

Amine Unit Monitoring and Fuel Gas H_2S Limit

In addition, the source requested that the Division revise the permit to clarify that the averaging time for the H_2S limit on the fuel gas from the amine unit is on an annual average. The amine unit fuel gas H_2S limit was included in the EPA PSD permit and no averaging time was specified in the permit. The source has indicated that based on correspondence from the processing of the EPA PSD permit, they believe the H_2S limits were taken to restrict annual emissions and therefore the averaging time for the H_2S limit was intended to be annual. This correspondence (letter from The Litwin Corporation to Fred Longenberger, EPA, dated September 20, 1978) indicates that the intent was to reduce SO_2 emissions from the project to less than 100 lbs/hr, 1000 lbs/day and 50 tons per year, whichever is more restrictive, in order to avoid BACT. (Under the PSD rules at the time of permit issuance (February 28, 1979) BACT was not required for projects that were below those levels.) According to the information in that letter, the 50 tons/yr level was the most restrictive (project emissions were estimated at 47.9 tons/yr, 262 lbs/day and 11 lbs/hr); therefore, the Division agrees it appears that EPA intended that the averaging time for the H_2S limit in the PSD permit to be annual.

In addition, the source requested that the Title V permit specify that the continuous H_2S monitoring system specified in the SO_2 Compliance Plan be used to monitor compliance with the H_2S limitation, rather than the grab samples referenced in the EPA PSD permit. The Division agrees that the H_2S monitoring required by NSPS Subpart J is more stringent than the grab samples required by the EPA PSD permit; therefore, the permit will be revised to specify that compliance with the amine unit H_2S limit shall be monitored using the H_2S continuous monitoring system required by NSPS Subpart J (Section II, Condition 22.5.2).

Finally, the source addressed a letter dated April 13, 1992 that was submitted to EPA. In this letter the source indicated their intent to move the grab sample location used for sampling the gas from the amine unit. The sample had previously been taken directly after the fuel gas contactor in the amine unit and the source proposed to move the location to just after the sweet gas fuel drum (which is downstream of the fuel gas contactor). Since propane and natural gas can be introduced into the fuel gas system

at the sweet gas fuel drum, the source proposed to subtract any effect these gases would have on the amine unit gas in order to monitor compliance with the H_2S limit on the amine unit fuel gas. The EPA PSD permit did not specify a sampling location for the amine unit fuel gas and it is not clear whether EPA responded to the April 13, 1992 letter. However, the Division agrees that the changes requested by the source clarify the monitoring required by the EPA PSD permit and will revise the permit to reflect the requested changes.

Modification Type

The source indicated that this modification would qualify as a minor modification. As discussed above, under the June 4, 2007 modification, a modification that results in an increase in emissions below the PSD significance level can be processed as a minor modification. This modification does not result in any change in permitted emissions; therefore, the Division agrees that this modification can be processed as a minor modification.

In addition, as discussed above, under the June 4, 2007 modification, a modification that triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification and must be processed as a significant modification. This modification does not trigger either NSPS or MACT requirements; therefore, the Division agrees that this modification can be processed as a minor modification.

In addition, the Division requires that "every significant change in existing monitoring permit terms or conditions" be processed as a significant permit modification (Colorado Regulation No. 3, Part C, Section I.B.36.h.(ii)). The Division considers that streamlining the EPA PSD monitoring requirements and clarifying the averaging time for the amine unit fuel gas H_2S limit, is not a significant change in existing monitoring; therefore, the Division agrees that this modification can be processed as a minor modification.

Modeling Requirements

This modification does not result in any change in emissions; therefore, no modeling is required for this modification.

June 18, 2008 Modification

The purpose of this modification is to revise the emission limits in the Title V permit for the truck loading rack and reallocate permitted VOC emissions between the two regulated sources (currently noted as the loading docks and the flare). The source is requesting this revision in order to base the permitted emissions on the MACT emission limitations. To that end the source requested that emissions be based on the MACT limit of 10 mg of TOC per liter of gasoline loaded for the truck dock vapor collection and processing system (includes the flare) and a leak repair threshold of 500 ppm (using emission factors from EPA's Protocol for Equipment Leak Emission Estimates, petroleum industry correlation curves) for the truck dock fugitive emissions from equipment leaks.

Permitted emissions in the current permit were based on AP-42 emission factors for loading losses. Based on the calculated loading losses, the capture system was assumed to be 99% efficient (for loading) and it was assumed that 5% of losses were captured, with the rest flared (VOC emissions from the flare were based on the AP-42 emission factor for flares).

The change in emissions based on the new calculation methodology are shown in the table below:

	Emissions (tons/yr)				
	VOC – Flare	VOC – Loading	VOC – Total	NO_X	CO
Requested Emissions	24.1	0.62	24.72	3.3	17.7
Current Permitted Emissions	5.9	23.6	29.5	2.9	15.6
Change in Emissions	18.2	-22.98	-4.78	0.4	2.1

This modification results in a decrease in total VOC emissions from truck loading and a slight increase in NO_X and CO emissions.

Modification Type

The source indicated that this modification would qualify as a minor modification. As discussed above, under the June 4, 2007 modification, a modification that results in an increase in emissions below the PSD significance level can be processed as a minor modification. There is no increase in total VOC emissions with this modification and slight increases of NO_X (0.4 tons/yr) and CO (2.1 tons/yr), which are well below the PSD significance levels (40 tons/yr of NO_X and 100 tons/yr of CO). Therefore, the Division agrees that this modification can be processed as a minor modification.

In addition, as discussed above, under the June 4, 2007 modification, a modification that triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification and must be processed as a significant modification. No NSPs or MACT requirements are triggered by this modification; therefore, the Division agrees that this modification can be processed as a minor modification.

Modeling Requirements

This modification results in slight increases in NO_X (0.4 tons/yr) and CO (2.1 tons/yr) emissions, which are well below the modeling thresholds in the Division's modeling guidance. Therefore, modeling is not required.

September 2, 2008 Modification

The purpose of this modification is to revise the monitoring parameter for the truck dock flare from a flame scanner to a thermocouple. A performance test was conducted in June 2008 to establish an acceptable temperature range. The source has requested

that the appropriate operating range for the flare is at 500 ° F or higher.

Modification Type

The source indicated that this modification would qualify as a minor modification. As discussed above, under the June 4, 2007 modification, a modification that results in an increase in emissions below the PSD significance level can be processed as a minor modification. This modification does not result in any change in permitted emissions; therefore, the Division agrees that this modification can be processed as a minor modification.

In addition, as discussed above, under the June 4, 2007 modification, a modification that triggers either Section 111 (NSPS) or 112 (MACT) requirements is considered a Title I modification and must be processed as a significant modification. This modification does not trigger either NSPS or MACT requirements; therefore, the Division agrees that this modification can be processed as a minor modification.

Finally, as discussed above, under the December 17, 2007 modification, a modification that is a significant change in existing monitoring permit terms or conditions must be processed as a significant modification. The Division considers that this change to the monitoring parameter is not a significant change to existing monitoring; therefore, the Division agrees that this modification can be processed as a minor modification.

Modeling Requirements

This modification does not result in any change in emissions; therefore, no modeling is required for this modification.

March 9, 2009 Additional Information Submittals

Submittal of APEN for fugitive emissions from equipment leaks associated with Tank T-79

As discussed previously, under the September 10, 2007 modification, the addition of tank T-79 is considered a minor modification. The APEN submitted with the September 10, 2007 modification did not include fugitive emissions; therefore, at the request of the Division the source submitted a separate APEN for fugitive emissions from tank T-79.

Reformer Catalyst Regeneration Emission Factors and APEN Cancellation Request

The source requested that the emission factors for the reformer catalyst regeneration (F004) be removed from the permit and that the APEN be cancelled. The source submitted performance test data that showed that emission from the NO_X, CO and VOC emissions from reformer catalyst regeneration (F004) are below 20 lbs/yr, which is below the APEN de minimis levels. The source's emission estimates were based on the average lbs/hr emission rate for each pollutant. It should be noted that when the maximum lbs/hr emission rate is used, emissions are still below 60 lbs/yr. The Division agrees that the emission factors identified in the current permit are not appropriate. The

reformer catalyst regeneration is subject to the requirements 40 CFR Part 63 Subpart UUU and therefore, under the "catch-all" provisions, an APEN is required for the reformer catalyst regeneration (F004), regardless of the level of emissions. The Division considers that the purpose of the "catch-all" is to make the Division aware of APEN and/or permit exempt activities that are subject to other applicable requirements (such as federal MACT and NSPS requirements). Therefore, since the provisions in 40 CFR Part 63 Subpart UUU are included in the permit and because emissions from this activity are so low, the Division considers that an APEN is not required for this activity. Since it appears that an APEN was never filed for this activity, there is no APEN to cancel.

March 12, 2009 Comments on the Draft Permit

In their comments on the draft permit and technical review document, the source requested administrative type corrections to various parts of the permits. Those specific changes are addressed in Section III – "Discussions of Modifications Made", under "Source Requested Modifications".

April 2, 2009 Additional Information Submittal

The source submitted information regarding the requirements in the site remediation MACT (40 CFR Part 63 Subpart GGGGG) and how those requirements apply to the East Plant. According to the source clean-up is subject to a RCRA clean-up order and therefore is exempt from the MACT requirements as specified in 40 CFR Part 63 Subpart GGGGG § 63.7881(b)(3). The source has requested that the East Plant permit be revised to reflect that the Site Remediation MACT applies but that the facility is exempt from the requirements. Its not clear exactly what the source expects in the permit, but the Division will add the site remediation MACT requirements to the permit shield for non-applicable requirements. This is consistent with the West Plant permit.

III. Discussion of Modifications Made

Source Requested Modifications

The Division addressed the source's requested modifications as follows:

June 4, 2007 Modification

Section I, Condition 5.1

The source requested that the description of the source in this table be revised to correct the physical capacity of the tank (4,933 barrels vs. 171,528 gallons as specified in the permit) and to reflect the appropriate fuels that will be stored in the tank. The change has been made as requested.

In addition, the aviation fuel transfer station (F028) was removed from the table.

Section II, Condition 7.1

The sentence in this condition that addresses emissions from aviation fuel transfer was removed.

Section II, Condition 15

Revised the language in this condition to reflect the higher VOC emission limit and the change in use. In addition, the throughput limit was converted to barrels.

Section II, Condition 18

Removed the aviation fuel transfer station (F028) from this condition.

Appendices B and C

The aviation fuel transfer station (F028) was removed from the tables.

August 3, 2007 Modification

Section II, Condition 2

Section II, Condition 2 was revised to include the appropriate emissions and heat input limits for the FCCU pre-heater and the appropriate language for calculating emissions and demonstrating compliance with the heat input limitations. In addition, the NSPS J requirement for fuel-burning equipment and the requirement to submit a case-by-case MACT (112(j)) application were included in the permit. Finally, the source had indicated that the requirement in the CD to conduct an initial performance test on the pre-heater should be included in the permit. Since no initial test has been conducted, this requirement has been included in the permit also.

September 10, 2007 Modification

Section II, Condition 15

Section II, Condition 15 was revised to include the new tank (T079) and its associated emissions and throughput limits.

Section II, Condition 18

The Division included fugitive VOC emissions from the equipment leaks associated with this tank (T079) in the permit in Section II.18.

Section I, Condition I, Condition 5.1 and Appendices B and C

The table was revised to add tank T079.

December 17, 2007 Modification

Section II, Condition 2.9

The language in Condition 2.9 was revised to indicate that the SO_2 CEMS is required by the Valero Consent Decree (paragraph 90) and to include the Consent Decree language in the permit.

Section II, Condition 5.7

This condition was revised to specify that the H_2S limit is on an annual average, that the H_2S monitoring system (Section II, Condition 22.5.2) shall be used to determine the H_2S content of the gas and to include language specifying how the annual average shall be calculated (including procedures to back out the affect that propane, natural gas and/or reformer gas on the H_2S content of the amine unit gas).

Section II, Condition 5.9

The last sentence in the first paragraph in Condition 5.9 was revised to specify that whenever the CEMS is not operating SO_2 emissions from the Claus Plant shall be determined as specified in Appendix H.

The second paragraph in Condition 5.9 (estimating SO_2 emissions from other locations within the refinery) was removed and included in the permit shield for streamlined conditions.

The third paragraph in Condition 5.9 (record retention) was removed and included in the permit shield for streamlined conditions.

The fourth paragraph in Condition 5.9 (additional sampling when the Claus Unit isn't operating) was removed and included in the permit shield for streamlined conditions.

The second to the last paragraph in Condition 5.9 was revised to include the elements specified in Condition 7 of the EPA PSD permit. In the current permit, this paragraph only referenced Condition 7; therefore, the conditions were added so that the reader would not have to refer back to the EPA PSD permit.

Section III.3 – Permit Shield, Streamlined Conditions

Added the last phrase of Condition 4(a) of the EPA PSD permit (estimating SO_2 emissions from the Claus Plant when the CEMS are down) to the table for streamlined conditions. This is streamlined in favor of the revised language in Section I, Condition 5.9 that requires that whenever the CEMS is not operating SO_2 emissions from the Claus Plant shall be determined as specified in Appendix H.

Added Condition 4(b) of the EPA PSD permit (estimating SO_2 emissions from other sources) to the table for streamlined conditions. This is streamlined in favor of the H_2S monitoring system (Section II, Condition 22.5.2) and the SO_2 Compliance Plan (Section II, Condition 22.4 and Appendix H).

Added Condition 4(c) of the EPA PSD permit (record retention) to the table for streamlined conditions. This is streamlined in favor of the Title V recordkeeping requirements (Section IV, Conditions 22.b and c).

Added Condition 4(d) of the EPA PSD permit (installing a CEMS on the FCCU) to the table for streamlined conditions. This is streamlined in favor of the Consent Decree requirement to have a CEMS on the FCCU (Section II, Condition 2.9).

Added Condition 4(e) of the EPA PSD permit (additional sampling when the Claus plant is not being operated) to the table for streamlined conditions. This is streamlined in favor of the H_2S monitoring system (Section II, Condition 22.5.2) and the SO_2 Compliance Plan (Section II, Condition 22.4 and Appendix H).

Added monitoring component (grab samples) of Condition 2(a) of the EPA PSD permit to the table for streamlined conditions. This is streamlined in favor of the H_2S monitoring system (Section II, Condition 22.5.2), which has been referenced in Section II, Condition 5.7.

Added Appendix A of the EPA PSD permit to the table for streamlined conditions. Appendix A of the EPA PSD permit has been streamlined in favor of the SO_2 Compliance Plan (Condition 22.4 and Appendix H).

June 18, 2008 Modification

Section II. Condition 7.1

Section II, Condition 7.1 was revised to reflect the requested emission limits for the truck dock vapor collection and processing system and the truck dock fugitive emissions from equipment leaks and to indicate the new emission factors.

September 2, 2008 Modification

Section II, Condition 7.4

Section II, Condition 7.4 was revised to reflect the change in the monitored parameter and the indicator range for that parameter.

March 9, 2009 Information Submittals

Section II, Condition 3, Summary Table

Removed the emission factors for F004 from the table. In addition, a note was added to the bottom of the table indicating that an APEN was not required for F004.

Section II, Condition 3.1

Removed the language in this condition related to calculating emissions for F004. This included removing the last line, in parenthesis, that refers to a July 1989 EPA report.

The Division assumes that this is the source of the emission factors for F004.

March 12, 2009 Comments on the Draft Permit

Section II, Condition 4.0, Summary Table

Replace the phrase “except as provided for in 2.2” with “except as provided for below” under Condition 4.4 (opacity).

Section II, Condition 6.3

Corrected the reference to “Condition 22.6” to “Condition 22.5”.

Section II, Condition 7.2

Added language indicating that sampling can be discontinued provided that a demonstration that the fuel gas stream is inherently low in sulfur is submitted in accordance with the requirements in 40 CFR Part 60 § 60.105(b) and the previously-approved AMP has been rescinded by EPA.

Section II.8, Summary Table

Corrected various permit condition numbers in the summary table.

Section II, Condition 9.2

Added language indicating that sampling can be discontinued provided that a demonstration that the fuel gas stream is inherently low in sulfur is submitted in accordance with the requirements in 40 CFR Part 60 § 60.105(b) and the previously-approved AMP has been rescinded by EPA.

Section II, Condition 15.6

Replaced “IV.B.2.c” with “VI.B.2.c” in the first sentence of Condition 15.6.

Section II.19, Summary Table

Corrected the permit condition number for the 20% opacity limit (first row in table).

Section II, Condition 22.5.2

Added language from § 60.105(a)(4)(vi), which provides an exemption from monitoring for certain source, to Condition 22.5.2.

Section II, Condition 23.1

Added “Group D” to the list in this condition.

Section II.27, Summary Table

Corrected the permit condition number for the wastewater separators (first row in table).

Section II.32, Equipment Leak Standards (63.648)

Added the phrase “and equipment leaks as defined in Subpart CC associated with” after “Truck Docks/R/C Docks”.

Section II, Conditions 33.84 and 33.86

Corrected typographical errors in these conditions.

Section II, Condition 36.8

Removed the word “automatically” in this condition.

Appendices B and C

References to “East Plant” were replaced with “Commerce City Refinery, Plant 2 (East)”.

April 2, 2009 Submittal

Section III.1

Added the provisions of the Site Remediation MACT to the permit shield for non-applicable requirements.

Other Modifications

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the Suncor East Plant Operating Permit with the source’s requested modifications. These changes are as follows:

Page Following Cover Page

- Changed the Responsible Official.

General

- The Reg 3 citations were revised throughout the permit, as necessary, based on the recent revisions made to Reg 3.

- Added "Commerce City Refinery, Plant 2 (East)" to the cover page and headers of the permit.

Section I – General Activities and Summary

- Revised Condition 1.2 to appropriately address the attainment status of the area in which the facility is located.

- Revised Condition 1.4 to include the 1999 and 2005 Consent Decrees.

- Revised Condition 1.5, to include Section IV Conditions 3.d and 3.g (last paragraph) as state-only conditions. Note that Section IV, Condition 3.d (affirmative defense provisions for excess emissions during malfunctions) is state-only until approved by EPA in the SIP.

- Made minor revisions to the language in Condition 3 (prevention of significant deterioration) to be more consistent with other permits. In addition, revised this condition to address the attainment status of the area in which the facility is located.

Section II – Reg 1/Reg 6 Part B SO_2 Emission Limits

At one time the Reg 1 limit for new refineries included an SO_2 emission limit of 0.7 lbs/bbl/day and 0.3 lbs/bbl/yr. However, this Reg 1 limit had not been approved in Colorado's SIP, therefore, the limits were state-only enforceable. There was also an SO_2 SIP limit of 0.3 lbs/bbl/day and the state-only Reg 6, Part B limit of 0.3 lbs/bbl. Previous versions of this permit included the SIP SO_2 limit of 0.3 lb/bbl/day, the state-only Reg 1 SO_2 limit of 0.3 lbs/bbl/yr (the 0.7 lb/bbl/day limit was streamlined in favor of SIP limit) and the state-only Reg 6, Part B SO_2 limit of 0.3 lb/bbl. However, prior to the issuance of this permit in October 2006, Reg 1 was revised to remove the 0.7 lbs/bbl/day and 0.3 lbs/bbl/yr SO_2 limits and reinstate the previously approved SIP limit of 0.3 lbs/bbl/day. While this particular change was reflected in the permit in Section II, Condition 22, various conditions in the permit still list the state-only former Reg 1 limit of 0.3 lbs/bbl/yr. The Division is removing the state-only Reg 1 limit from the summary tables in Section II, Conditions 1 thru 3, 5 thru 9 and 11. In addition, the summary table in Section II, Condition 1 incorrectly lists the Reg 1 limit as 0.3 lb/bbl/year, so it was corrected to read 0.3 lb/bb/day.

Section II – Condition 18

- Corrected the emission unit numbering in the table and table title.

Section II – Condition 22

- Removed the requirement to submit an updated SO_2 Compliance Plan within 100 days of initial permit issuance, since the updated plan has been submitted.

Section IV – General Conditions

- The upset requirements in the Common Provisions Regulation (general condition 3.d) were revised December 15, 2006 (effective March 7, 2007) and the revisions were included in the permit. Note that these provisions are state-only enforceable until approved by EPA into Colorado's state implementation plan (SIP).

- Removed the statement in Condition 3.g (affirmative defense provisions) addressing EPA approval and state-only applicability. The EPA has approved the affirmative defense provisions, with one exception and the exception, which is state-only enforceable is identified in Section I, Condition 1.4.

- Added an "and" between the Reg 3 and C.R.S. citations in General Condition 4 (compliance requirements).

- Replaced the reference to "upset" in Conditions 5 (emergency provisions) and 21 (prompt deviation reporting) with "malfunction".

- Added the requirements in Colorado Regulation No. 7, Section V.B (disposal of volatile organic compounds) to General Condition 29.

Appendices

- Replaced Appendices B and C with the latest versions.

- Changed the mailing address for EPA in Appendix D.

- Included the Division approved updated SO_2 Compliance Plan in Appendix H.